

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
AUSTIN DIVISION

XITRONIX CORPORATION, a Delaware Corporation,	§	CIVIL CAUSE NO: 1:14-CV-1113
	§	
	§	
Plaintiff,	§	
	§	
v.	§	DEMAND FOR JURY TRIAL
	§	
KLA-TENCOR CORPORATION,	§	
Individually and d/b/a KLA-TENCOR,	§	
INC., a Delaware Corporation,	§	
	§	
Defendant.		

**COMPLAINT**

TO THE HONORABLE JUDGE OF SAID COURT:

Plaintiff XITRONIX CORPORATION (“Xitronix” or “Plaintiff”) complains of KLA-TENCOR CORPORATION, Individually and d/b/a KLA-TENCOR, Inc. (“KLA” or “Defendant”), and for its complaint, alleges as follows:

**THE PARTIES**

1. Xitronix Corporation is a Delaware corporation headquartered in Austin, Texas.
2. KLA-Tencor Corporation is a Delaware corporation headquartered in San Jose, California. This Defendant may be served by serving a copy of this Complaint and a summons on CT Corporation System, 350 North St. Paul, Dallas, Texas, 75201.

**JURISDICTION AND VENUE**

3. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1337 (commerce and antitrust regulation) and 1331 (federal question), as this action arises under Section 2 of the Sherman Act (15 U.S.C. § 2), and Sections 4 and 16 of the Clayton Act (15 U.S.C. §§ 15(a), 26).

4. This Court has personal jurisdiction over KLA because KLA has contacts within the State of Texas, such that compelling them to appear and defend in this Court does not offend traditional notions of fair play and substantial justice. In addition, this Defendant maintains an agent for service of process within the State of Texas.

5. Venue is proper because KLA resides within this judicial district as provided in 28 U.S.C. § 1391(b) and (c), and as provided in Sections 4 and 12 of the Clayton Act (15 U.S.C. §§ 15, 22).

### **SUMMARY OF CLAIMS**

6. This case arises from KLA's attempted monopolization of interstate and foreign commerce by fraudulently prosecuting through issuance certain patent claims that were identical to, or broadened in scope over, patent claims held finally invalid by the Honorable Sam Sparks some four years prior, while fully knowing it had no basis for obtaining such patent claims, for the specific purpose of excluding its competitor Xitronix from the market for dopant activation metrology, such that KLA could bring its own Therma-Probe 680 product to market without competition. This fraudulent conduct has in fact damaged and continues to damage Xitronix and competition in general.

7. KLA is the assignee of United States Patent No. 8,817,260 (the '260 patent<sup>1</sup>), United States Patent No. 7,646,486 (the '486 patent), and No. 7,362,441 (the '441 patent). The '260 patent is a continuation of the '486 patent, which is a continuation of the '441 patent, which itself was a continuation of an earlier patent. The '260, '486, and '441 patents were each prosecuted with the central aim of capturing Xitronix's technology within the scope of their respective claims.

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<sup>1</sup> For simplicity, references to patents and to their respective applications will be made by reference to the issued patent number.

8. In the course of an earlier patent infringement case, *Xitronix Corp. v. KLA-Tencor Corp.*, No. 08-cv-723, in the United States District Court, Western District of Texas (“the ‘441 litigation”), Judge Sparks held claim 9 of the ‘441 Patent invalid on indefiniteness grounds and further rendered judgment declaring the claim invalid on obviousness and anticipation grounds as found by a jury on clear and convincing evidence.

9. KLA’s most recently acquired patent—the ‘260 patent, which issued August 26, 2014—was procured by fraudulent conduct before the United States Patent and Trademark Office (“the PTO”). The only material difference between claim 9 of the ‘441 patent—held finally invalid by Judge Sparks — and claim 1 of the ‘260 patent is that the new claim 1 dropped the limitation of claim 9 that Xitronix did not practice. The claims of ‘260 patent would not have issued but for the intentional and willful misrepresentations and omissions made by KLA’s patent prosecution attorney, Michael Stallman.

10. In fact, in the face of Stallman’s refusal to accept and abide by Judge Sparks’s prior express holdings, Stallman’s conduct before the PTO requires a finding of knowing and willful fraud undertaken with the intent to procure the issuance of the claims he presented in the ‘260 patent.

11. The prosecution and issuance of the ‘260 patent has created an artificial impediment to Xitronix’s ability to obtain the financing necessary to compete in the market, and to the market adoption of Xitronix’s technology. As a result of the fraudulent conduct of Michael Stallman before the PTO, KLA has obtained the illegitimate power to exclude its competitor Xitronix from the relevant market.

12. KLA has engaged in exclusionary conduct by fraudulently prosecuting to issuance the ‘260 patent. That conduct was, and is, specifically intended to monopolize and destroy

competition in the market for dopant activation metrology, a market currently valued at approximately \$650 million USD.

13. KLA has a dangerous probability of achieving monopoly power in the dopant activation metrology market, as its Therma-Probe 680 system is one of only two products in the market—the other product being the Xitronix XP700 system, for which KLA has obtained the power to exclude Xitronix from manufacturing, selling, or offering for sale.

14. KLA's conduct has artificially and illegitimately interfered with Xitronix, a competitor ready, willing, and able to produce its superior product on a commercial level, has injured competition in the dopant activation metrology market, and has caused damage to consumers of semiconductor electronic products worldwide. These are precisely the type of injuries which are intended to be redressed by antitrust laws.

#### **FACTUAL BACKGROUND**

15. Optical inspection for semiconductor manufacturing is a multi-billion dollar industry. Optical inspection techniques are inherently non-destructive (non-contact) and rapid, and thus have been adopted for use in in-line process control of semiconductor manufacturing throughout the world.

16. KLA is the world's largest supplier of equipment to the market for optical inspection of semiconductor wafers, and has dominant market power in that market. For example, in 2012, KLA controlled approximately eighty percent of this market, with its next two largest competitors individually collectively controlling about ten percent of the market.

17. In the last decade, the semiconductor manufacturing industry has encountered a rapidly expanding need to measure the electronic properties of semiconductor structures. For example, with the industry adoption of laser annealing processes, a crucial need for process

control of dopant activation has emerged. At present, this “dopant activation metrology” market is estimated to require approximately four hundred dopant activation metrology systems (such as, *e.g.*, the KLA Therma-Probe 680 or the Xitronix XP700), each selling for a price of between \$1.5 and \$1.8 million USD, and is therefore presently valued at roughly \$650 million USD.

18. In 2007, Xitronix introduced products incorporating its proprietary photo-modulated reflectance technologies to the dopant activation metrology market.

19. In 2007, KLA acquired a company called “Therma-Wave” for a price of \$75 million USD. In the late 1980s, Therma-Wave had introduced the “Therma-Probe,” a type of photo-modulated reflectance measurement system,<sup>2</sup> to the semiconductor optical inspection market. The Therma-Probe was used primarily for control of the dopant implant process in silicon semiconductor manufacturing, as was important from the late 1980s into the 1990s. However, the Therma-Probe technology was hampered by inherently low signal levels, and by the mid 2000s, the Therma-Probe product suffered from diminished sales and relevance.

20. Nevertheless, once KLA learned of Xitronix’s introduction of a new photo-modulated reflectance technology to the dopant activation metrology market in 2007, KLA, through its patent attorney Michael Stallman, drafted new claims to a then-existing Therma-Probe patent application, with the specific intent to capture the Xitronix technology within the newly drafted claims. That patent application became the ‘441 patent.

21. Once the ‘441 patent issued in 2008, KLA accused Xitronix of infringement. KLA’s allegations of infringement prevented Xitronix’s (and KLA’s) potential customers from adopting Xitronix’s technology by creating uncertainty about the rightful ownership to

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<sup>2</sup> The original Therma-Probe focused an intensity modulated “pump” laser beam onto a spot on a silicon sample, thus modulating the silicon reflectivity. These changes were detected by a coincident laser “probe” beam of 633 nanometer wavelength.

Xitronix's technology and by creating the risk of infringement by any customer who might decide to implement Xitronix's technology in its manufacturing line. No manufacturer was willing to take such a risk, nor was any manufacturer willing to commit its manpower to the testing of potentially infringing products. Consequently, KLA's accusation generated a de facto injunction against the sale of Xitronix products in the semiconductor optical inspection market.

22. KLA's infringement allegations were litigated in the '441 litigation, culminating in a jury trial presided over by Judge Sparks in November 2010.

23. During the '441 litigation, Xitronix admitted that it practiced all but one of the limitations of claim 9 of the '441 patent – the “substantially maximize” limitation. Accordingly, and in view of Judge Sparks's claim construction entered during the '441 litigation, Michael Stallman, in his capacity as KLA's patent attorney, modified claim 9 of the '441 patent by (i) deleting the limitation not practiced by Xitronix, and by (ii) explicitly adopting the claim construction language, and submitting a modified claim based on that construction to the PTO in KLA's then pending application for the '486 patent.

24. The '486 patent issued in January of 2010 (during the pendency of the '441 litigation), but not before KLA, again through Michael Stallman, filed its third continuation application specifically targeting Xitronix—the '260 patent application. The permutations of claim 9 of the '441 patent appearing in the '486 patent—the deletion of the limitation not practiced by Xitronix and the adoption of Judge Sparks's claim construction language—survive essentially verbatim in claim 1 of the now-issued '260 patent.

25. The '441 litigation proceeded to trial, wherein the federal jury found that Xitronix did not infringe claim 9, and that claim 9 was invalid. Thereafter, Judge Sparks rendered judgment giving effect to those findings and further holding claim 9 invalid for indefiniteness.

26. As to the reason for declaring the claims invalid on indefiniteness grounds, in an extensive and detailed order, Judge Sparks concluded that the phrase “substantially maximize,” as found in claim 9, was too vague to inform those skilled in the prior art of what was protected by the patent claims.

27. The January 31, 2011 entry of the final judgment in the ‘441 litigation should have brought an end to KLA’s then multi-year attempts to bar Xitronix from competition on the merits in the dopant activation metrology market (as KLA declined to appeal the final judgment). The verdict completely vindicated Xitronix against KLA’s allegations, such that impediments imposed by KLA on Xitronix’s entry into the market should have concluded.

28. However, on February 2, 2011, just two days after the entry of the final judgment in the ‘441 litigation, the PTO examiner allowed KLA’s then-pending claims in the ‘260 patent—comprising subject matter identical to the invalidated patent claims of the ‘441 patent.

29. In response to the PTO’s allowance, on February 10, 2011, Michael Stallman, acting on behalf of KLA, submitted a request for continued examination of the ‘260 patent application to the PTO, thus re-opening prosecution of the ‘260 patent. Stallman concurrently submitted an information disclosure statement listing an “Executed ORDER from the United States District Court for the Western District of Texas, Austin Division, Case No. A-08-CA-723-SS, dated January 31, 2011, 13 pages in length” (“the final judgment order”).

30. However, Stallman did not explain to the examiner how the final judgment order related to the then-pending claims of the ‘260 patent and did nothing to suggest to or inform the patent examiner that pending claims were unpatentable for the same or substantively identical reasons the claims of the ‘441 patent (specifically, claim 9) were invalid. Nor did Stallman

inform the examiner that the pending claims were identical to, or broadened from, claims in the '441 patent held invalid by final judgment.

31. Following the close of the '441 litigation, Xitronix initiated discussions with potential investors for the purpose of raising money to re-build its business operations. However, KLA's continued efforts to obtain patent protection covering the Xitronix technology forced Xitronix to disclose its potential liability to potential investors, and consequently, those investors withdrew from further discussions pending the ultimate outcome of KLA's patent prosecution efforts.

32. In view of KLA's continuing prosecution of the same invalid patent claims targeting Xitronix, Xitronix sued KLA in state court for the business and anti-competitive damages caused by KLA's infringement allegations. And as evidence of KLA's bad faith, Xitronix cited KLA's continuing prosecution of the same invalid patent claims targeting Xitronix.

33. KLA removed that action to the United States District Court for the Western District of Texas, and thereafter Judge Sparks remanded the case to state court for lack of subject matter jurisdiction. However, on January 20, 2012, the state court granted summary judgment to KLA on unspecified grounds. The state trial court's judgment became final on March 1, 2012.

34. Xitronix appealed, and the Third District Court of Appeals, Austin, Texas, affirmed the state court's summary judgment on August 7, 2014, holding that Xitronix's antitrust claims arose from the same 'nucleus of operative facts' underlying its claims in the '441 patent litigation. At present Xitronix has filed a petition for review to the Supreme Court of Texas, Case No. 14-0736, challenging that disposition.



35. This case concerns Stallman's fraudulent conduct before the PTO, undertaken on behalf of KLA, and which conduct ultimately resulted, on August 26, 2014, in the issuance of the '260 patent to KLA.

36. During the period from February 10, 2011, when Michael Stallman first disclosed the final judgment order to the PTO, until the issuance of the '260 patent, Stallman maintained the prosecution of the same subject matter as contained in invalid claims of the '441 patent, but failed to explain the relevance of the final judgment order to the presented claims of the '260 patent.

37. Once the examiner issued his initial rejection of the claims in the continuing '260 patent application on July 25, 2013, but missed the relevance of the final judgment order to the presented claims, Stallman repeatedly submitted arguments for patentability which directly contradicted the final judgment rendered by Judge Sparks. As shown below, the totality of Stallman's conduct, as viewed from the date upon which the issue fee for the '260 patent was paid, was intentionally deceptive and resulted in the improper issuance of the '260 patent to KLA on August 26, 2014.

38. The fraudulent prosecution and issuance of the '260 patent has perpetuated, and continues to perpetuate, KLA's effort to impede and exclude Xitronix from competition on the merits in the dopant activation metrology market. KLA's conduct has generated an improper restraint on trade and on competition within this market. KLA's prosecution and procurement of the '260 patent was undertaken in bad faith in order to monopolize the dopant activation metrology market, and to allow KLA to introduce its updated Therma-Probe 680 product to that market without having to compete on the merits with Xitronix's superior product. Thus, KLA

has engaged in exclusionary conduct with the specific intent to monopolize or destroy competition in the dopant activation metrology market.

39. KLA has a dangerous probability of achieving monopoly power in the dopant metrology market based upon (i) its introduction of the Thermo-Probe 680 for dopant activation metrology in December, 2012, (ii) the power of the '260 patent to exclude its sole competitor from the market, and (iii) in light of KLA's overall market share in the semiconductor optical inspection market.

40. Xitronix has been, and is, ready, willing and able to produce competing products on a commercial level, but is impaired from doing so by KLA's anti-competitive conduct. The exclusion of Xitronix generates an injury to the market and to competition in general. KLA's conduct is precisely of the type that antitrust laws are intended to prevent.

41. Throughout the prosecution of the '260 patent, Stallman failed to disclose material information to the PTO that he had a duty to disclose, and that had he disclosed, would have foreclosed issuance of the '260 patent.

42. Furthermore, during 2013 and 2014, Stallman made repeated and blatantly false representations to the PTO that were material to the patentability of the claims of the '260 patent.

43. These material false representations and omissions were specifically intended to deceive and induce the PTO to improperly grant the '260 patent to KLA

44. Patent prosecutors owe an uncompromising duty of candor in their dealings with the PTO. However, throughout the prosecution of the '260 patent, Stallman failed to explicitly inform the PTO that claim 1 of the '260 patent is a broadened version of claim 9 of the '441 patent, which claim had previously been held invalid by the final judgment in the '441 litigation.

45. Had the examiner been made explicitly aware of direct relationship between claim 1 of the '260 patent and claim 9 of the '441 patent during the prosecution, he would not have allowed claim 1 of the '260 patent to issue because broadened versions of invalid claims are necessarily invalid, and because claim 1 of the '260 patent is unpatentable for the same or substantially identical reasons that claim 9 of the '441 patent was previously held invalid.

46. In particular, the only material difference between claim 1 of the '260 patent and claim 9 of the '441 patent as is that the new claim 1 dropped the limitation of claim 9 that Xitronix did not practice. In light of the claim construction entered by Judge Sparks during the course of the '441 litigation, the remaining limitations of claim 1 of the '260 patent, as issued, are identical or broadened in scope to the corresponding limitations of claim 9 of the '441 patent.

47. Claim 9 of the '441 patent provides as follows (with limitations labeled for convenience):

**9.** A method for evaluating a semiconductor sample comprising the steps of:  
[a.] periodically exciting a region on the sample with an intensity modulated pump beam in a manner to generate thermal and plasma waves which modulate the optical reflectivity of the sample;  
[b.] focusing a probe beam collinearly with the pump beam;  
[c.] monitoring the modulated changes in the power of the reflected probe beam;  
and  
[d.] generating output signals in response thereto, said output signals corresponding to the modulated optical reflectivity of the sample the output signals containing information which is used to evaluate the sample and  
[e.] wherein the wavelength of the probe beam is between 355 and 410 nm and  
[f.] is selected to substantially maximize the strength of the output signals corresponding to the modulated optical reflectivity response.

48. Claim 1 of the '260 patent provides (with limitations labeled corresponding to claim 9 of the '441 patent):

**1.** A method for evaluating a silicon semiconductor sample comprising the steps of:

[a.] generating an intensity modulated pump beam; exciting a region on the silicon semiconductor sample with the pump beam to produce thermal and carrier plasma effects which modify the optical reflectivity of the sample;  
[b.] focusing a fixed wavelength probe beam generated by a laser onto the sample within the region which has been excited,  
[e.] wherein the wavelength of the probe beam is between 360 and 410 nm;  
[c.] monitoring the changes in the power of the reflected probe beam induced by the pump beam; and  
[d.] generating output signals in response thereto, said output signals corresponding to the changes in the optical reflectivity of the sample the output signals containing information which is used to evaluate the sample.

49. And claim 5 of the '260 patent provides:

**5.** A method as recited in claim 1, wherein the wavelength of the probe beam is selected to substantially maximize the output signals corresponding to the changes in the optical reflectivity of the sample.

50. A straightforward comparison of these claims from the respective patents reveals that the only significant difference between these claims is that the “substantially maximize” limitation of claim 9 of the '441 patent (here labeled [f.]) has been exported into the '260 patent as a separate, dependent claim—now claim 5—thus broadening by subtraction (of one limitation) invalid claim 9 of the '441 patent. *See* Claim Comparison Chart attached as Exhibit A hereto.

51. Each remaining limitation of claim 1 of the '260 patent is substantively identical to, or broadened over, a corresponding limitation in claim 9 of the '441 patent.

52. For example, comparison of limitation [a.] of claim 9 of the '441 patent with limitation [a.] of claim 1 of the '260 patent reveals that the “intensity modulated pump beam” is identical, the change from “periodically exciting” to “exciting” is broadening (*e.g.* encompassing asynchronous excitation), and the change from “generate thermal and plasma waves” to “produce thermal and plasma effects” is identical or broadening. The requirement of a “silicon

semiconductor sample” is a distinction without difference since the semiconductor samples evaluated throughout the history of the Therma-Probe have been predominantly silicon.

53. Likewise, comparison of limitation [b.] of claim 9 with limitation [b.] of claim 1 reveals that the change from ‘collinearly focusing’ to ‘co-focusing’ the probe beam is broadening (*e.g.* allowing the pump and probe beams to travel along different paths provided they remain co-incident on the sample surface). The requirement the probe beam be “generated by a laser” in claim 1 of the ‘260 patent is identical to the limitation of claim 9 of the ‘441 patent in view of the federal court’s claim construction which defined the probe beam of the ‘441 patent as a “laser output used to measure reflectance.”<sup>3</sup> And the requirement of a “fixed wavelength” probe beam is a distinction without a difference since the lasers used throughout the history of the Therma-Probe have been predominantly of fixed wavelength.

54. Similarly, comparison of limitation [c.] of claim 9 of the ‘441 patent with limitation [c.] of claim 1 the ‘260 patent reveals that these limitations are identical in view of Judge Spark’s prior claim construction which defined the term “monitoring the modulated changes” as “monitoring the changes in the power of the reflected probe beam,” whereas comparison of element [d.] of claim 9 with element [d.] of claim 1 reveals that these limitations are also identical in view of Judge Sparks’s prior claim construction which defined the term “modulated optical reflectivity” as “changes in the light reflectivity of the sample resulting from changes in the power of the pump beam when directed toward the sample.”<sup>4</sup>

55. Finally, comparison of limitation [e.] of claim 9 with element [e.] of claim 1 reveals that the change from “wherein the wavelength of the probe beam is between 355 and 410

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<sup>3</sup> See “Order” from the United States District Court for the Western District of Texas Austin Division, Case No. A-08-CA-723-SS, Sept. 1, 2009, Doc. 48, at 13 (“the Claim Construction Order”)

<sup>4</sup> See the Claim Construction Order, at pg. 14.

nm” to “wherein the wavelength of the probe beam is between 360 and 410 nm” is a nominal narrowing of less than ten percent without any discernible motivation or benefit over the range claimed in claim 9 of the ‘441 patent (355 to 410 nm). This distinction, like any others, is purely illusory.

56. Thus, with the exception of the “substantially maximize” limitation of claim 9 of the ‘441 patent (limitation [f.]), which, as noted, was exported to a separate dependent claim in view of Xitronix’s admissions in the ‘441 litigation, each of the limitations of claim 1 of the ‘260 patent are present in substantively identical form to the limitations found in invalid claim 9 of the ‘441 patent.

57. Therefore, claim 1 of the ‘260 patent, as issued, is nothing more than broadened version of claim 9 of the ‘441 patent, which claim had previously been held invalid the final judgment of the ‘441 litigation.

58. During the prosecution of the ‘260 patent KLA and its patent attorney Michael Stallman knew claim 9 of the ‘441 patent had been held invalid, and knew of the reasons wherefore, as set forth by Judge Sparks in his final judgment order.

59. Stallman owed an uncompromising duty of candor the PTO, including a duty to explicitly inform the PTO of information known to him material to the validity of the claims of the ‘260 patent, and to do so during the patent prosecution.

60. Had Stallman explicitly disclosed the one-to-one relationship between the limitations of claim 1 of the ‘260 patent and the limitations of claim 9 of the ‘441 patent, as shown above, the examiner would not have allowed claim 1 of the ‘260 patent, as written. Instead, the examiner would have first identified each of the limitations of claim 1 of the ‘260 patent as identical to, or broadened over, a corresponding limitation in claim 9 of the ‘441 patent.

Second, the examiner would have recognized claim 1 of the ‘260 patent as broadened over claim 9 of the ‘441 patent by the deletion of one limitation—the “substantially maximize” limitation. And finally, in noting claim 9 of the ‘441 patent had been held invalid by final judgment, the examiner would have found claim 1 of the ‘260 patent was nothing more than a broadened version of an invalid patent claim, and would have therefore rejected the claim.

61. Thus, Stallman’s failure to map the relationship between claim 1 of the ‘260 patent and claim 9 of the ‘441 patent—information of which he was certainly aware since Stallman himself had created claim 1 of the ‘260 patent by modifying claim 9 of the ‘441 patent—constituted a material omission that, but for which, would have resulted in the rejection of the patent claim.

62. Furthermore, throughout the prosecution of the ‘260 patent, Stallman never explicitly informed the examiner that claim 1 of the ‘260 patent was re-drafted from claim 9 of the ‘441 patent in a manner intended to bring the Xitronix technology within the scope of the claim.<sup>5</sup> This likewise constituted a material omission that, but for which, would have resulted in the rejection of claim 1 of the ‘260 patent.

63. In particular, to the extent claim 1 of the ‘260 patent could be infringed by something that would not have infringed a base claim—here claim 9 of the ‘441 patent, which the federal jury found the Xitronix XP700 system did not to infringe—it is by definition broadened, even if narrower in other aspects.

64. Thus, if Stallman had explicitly informed the examiner of the manner in which claim 1 of the ‘260 patent came into existence, and in particular that claim 9 of the ‘441 patent

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<sup>5</sup> Based on Xitronix’ admission during the ‘441 litigation that its XP450 and XP700 products infringed each of the limitations of claim 9 of the ‘441 patent excepting one—the “substantially maximize” limitation—Stallman exported the “substantially maximize” limitation to a dependent claim, thereby creating a new, broadened claim that Xitronix ostensibly infringed.

was re-drafted in a manner to bring the Xitronix products within the scope of the claim, the examiner would have been forced to conclude claim 1 of the '260 patent was unpatentable as broadened over an invalid base claim—claim 9 of the '441 patent. Thus Stallman's failure to inform the examiner that claim 1 of the '260 patent was drafted in a manner to bring the Xitronix technology into the scope of the claim was but-for material to its issuance.

65. Stallman's actions throughout the prosecution of the '260 patent demonstrate an intent to mislead the PTO to improperly grant the '260 patent.

66. First, throughout the prosecution of the '260 patent, Stallman never explained how the final judgment order related to the presented claims of the '260 patent. Nor did Stallman ever inform the PTO that the claims he presented were unpatentable for the same or substantively identical reasons on which the corresponding claims of the '441 patent were held invalid.

67. The final judgment order was initialed by the examiner<sup>6</sup> as having been considered on July 12, 2013.

68. However, no claim rejections were based upon the final judgment order, nor was there any evidence that the examiner compared the language or otherwise performed any element-by-element comparison of claim 1 of the '260 patent to claim 9 of the invalid '441 patent.

69. Instead, on July 25, 2013, the examiner rejected the presented claims of the '260 patent as obvious over United States Patent No. 5,657,754 ("Rosencwaig")<sup>7</sup> in view of United

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<sup>6</sup> This was a new examiner from the examiner that originally allowed the '260 Patent on Feb. 2, 2011 (just two days after Judge Sparks rendered final judgment in the '441 litigation).

<sup>7</sup> The Rosencwaig reference was identified by the new examiner.



States Patent No. 5,074,669 (“Opsal”). Opsal discloses a Therma-Probe, whereas Rosencwaig discloses a similar device used for evaluating blood samples. The examiner stated:

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Rosencwaig to evaluate a semiconductor sample, as suggested by Rosencwaig, with the predictable result of producing thermal and carrier plasma effects which modify the optical reflectivity of the sample.

And on January 2, 2014, after he rejected Stallman’s argument that the Rosencwaig reference was non analogous art, the examiner issued a final rejection of the presented claims of the ‘260 patent, setting forth identical grounds for rejection.

70. While these stated rejections certainly have merit, the examiner failed to also independently note that (i) the presented claims of the ‘260 patent were broadened versions of claims asserted in the ‘441 patent, and (ii) those base claims (claims 7 & 9 of the ‘441 patent) had been held invalid by final judgment, or that the presented claims were unpatentable for the same reasons that rendered invalid the corresponding claims of the ‘441 patent.

71. In response to the examiner’s final rejection, on March 12, 2014, Michael Stallman, acting on behalf of KLA, submitted a request for continued examination of the ‘260 patent application, thus re-opening prosecution of the ‘260 patent, and concurrently cancelled the pending device claims “in favor” of the method claims. However, Stallman still did not explain how the final judgment order related to the then-pending claims of the ‘260 patent and did nothing to suggest to or inform the patent examiner that the presented claims remained unpatentable for the same or substantively identical reasons that the claims of the ‘441 patent were held invalid. Nor did Stallman inform the examiner that the presented claims were identical to, or broadened from, invalid claims in the ‘441 patent.

72. Rather, Stallman proffered arguments in support of patentability that ran explicitly counter to Judge Sparks's final judgment order. For example, Stallman represented:

[N]one of the prior art related to measuring the modulated reflectivity on silicon semiconductor samples taught the claimed probe beam wavelength of 360 to 410 nm.<sup>8</sup>

73. That representation echoed another one made by Stallman on October 8, 2013, when he represented to the examiner:

[T]he prior art fails to teach [the 360 to 410 nm] wavelength range for use in semiconductor samples when performing modulated optical reflectivity measurement.<sup>9</sup>

74. However, those representations directly contradicted the terms of the final judgment order rendered by Judge Sparks. Specifically, Judge Sparks stated:

Batista and Mansanares each individually taught that changing the probe beam wavelength from 670 [nm] to particular wavelengths in the range of 355 and 410 [nn] would increase the output signal by a factor of ten. This was strong motivation for a person of ordinary skill to change the wavelengths of the prior art Therma-Probe device and method using the teachings of Batista or Mansanares.

Final judgment order at 12.

75. Stallman also repeatedly argued:

Using a beam wavelength in [the 360 to 410 nm] range turned out to have specific benefits for certain samples.<sup>10</sup>

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<sup>8</sup> See: In the United States Patent and Trademark Office, *In re Patent Application of: Jon OPSAL et al.*, Application No.: 12/616,710, "Amendment After Final Action Under 37 C.F.R. 1.116," dated March 12, 2014, 6 pages in length, at pg. 5, second paragraph, first sentence.

<sup>9</sup> See: In the United States Patent and Trademark Office, *In re Patent Application of: Jon OPSAL et al.*, Application No.: 12/616,710, "Amendment In Response to Non-Final Final Office Action Under 37 C.F.R. 1.111," dated Oct. 8, 2013, 8 pages in length, at pg. 5, third paragraph, last sentence.

<sup>10</sup> See: In the United States Patent and Trademark Office, *In re patent Application of: Jon OPSAL et al.*, Application No.: 12/616,710, "Amendment After Final Action Under 37 C.F.R. 1.116," dated March 12, 2014, 6 pages in length, at pg. 4, third paragraph, next to last first sentence; In the United States Patent and Trademark Office, *In re patent Application of: Jon OPSAL et al.*, Application No.: 12/616,710, "Amendment In Response to Non-Final Final Office

76. However, Stallman failed to inform the examiner that the specific benefits claimed by that use in fact had been disclosed elsewhere—namely in Mansanares 2000 and Batista 2001. (*See* final judgment order at 11-12.)

77. Argument submitted to overcome an objection is intended to be relied upon. Thus Stallman’s attorney argument, which consists of multiple, blatant misrepresentations of material fact, demonstrates Stallman’s specific intent to mislead the PTO into granting the claims of the ‘260 patent.

78. Stallman succeeded in his deception effort. On April 17, 2014, the examiner allowed of claim 1 of the ‘260 patent, setting forth the following rationale:

Regarding claim [1], the prior art of record fails to anticipate or render obvious a method for evaluating a silicon semiconductor sample comprising, among other essential features, focusing a fixed wavelength probe beam generated by a laser onto the sample within the region that has been excited, wherein the wavelength of the probe beam is between 360 and 410 nm; monitoring the changes in the power of the reflected beam induced by the pump beam; and generating output signals in response thereto, said output signals corresponding to the changes in the optical reflectivity of the sample the output signals containing information which is used to evaluate the sample, in combination with the rest of the limitations of claim [1].

79. This stated rationale shows that the examiner did accept Stallman’s representations and proceeded to allow the subject matter of claim 1 of the ‘260 patent in ignorance of the bases set forth by Judge Sparks rendering the same subject matter unpatentable as invalid. However, upon issuance of that allowance, Stallman did nothing to inform the examiner of the fatal flaw in the rationale the examiner relied upon to allow the claim.

80. Had the examiner been so informed, the examiner would have used that information to conclude that claim 1 of the ‘260 patent was unpatentable over prior art just as

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Action Under 37 C.F.R. 1.111,” dated Oct. 8, 2013, 8 pages in length, at pg. 5, third paragraph, next to last sentence.

Judge Sparks had ruled in the context of the corresponding claims of the '441 patent. His failure to do so constituted a breach of his duty of candor by fraudulent omission, with the specific intent to obtain the benefits of an invalid patent for his client KLA, a patent which never would have issued had Stallman pointed out the examiner's error.

81. The duty to disclose material information includes a duty to bring to the examiner's attention material information within the applicant's knowledge. For example, material information required to be disclosed includes any admission that is made during litigation that is contrary to assertions made to examiner.

82. Substantial testimony during the '441 litigation established that it was well known by those of ordinary skill in the art that any wavelength could be used for the probe beam. Indeed, one of the named inventors of the '260 patent, Alex Salnik, testified at trial that the choice of the probe wavelength in the commercial embodiment of the prior art Therma Probe device was a design choice, but that any probe beam wavelength could be used. And even KLA's expert witness (Dr. David Aspnes) testified it was well known for forty years that the entire range of probe beam wavelengths were utilized in modulated optical reflectivity devices.

83. Yet Stallman did not disclose to the examiner that testimony from KLA's own witnesses in the '441 litigation was directly contradictory to his attorney argument in the '260 patent application. Rather, Stallman repeatedly and unequivocally argued that the prior art related to modulated optical reflectivity failed to teach probe wavelengths in the range of 360 to 410 nm.

84. While a prosecuting attorney is free to present argument in favor of patentability without committing fraud, he is not free to submit demonstrably false statements and leave it to the examiner to reach his own conclusions, *i.e.*, genuine misrepresentations of material fact are

prohibited. Stallman simply could not, in good faith, make such demonstrably false and wholly unreasonable arguments, given the final judgment of invalidity of claim 9 of the '441 patent, and the extensive reasoning set forth by Judge Sparks in its final judgment order in the '441 litigation.

85. It is implausible that Stallman's arguments to the PTO were made without knowledge of admissions to the contrary made during the federal patent case.

86. First, Stallman is a veteran patent prosecutor with over 30 years experience in the areas of business counseling, strategic IP planning, patent evaluation and due diligence, and IP litigation. He serves as a strategic business advisor to IP-driven companies, on issues including all phases of IP development and protection. Mr. Stallman has special expertise in industrial laser-based systems including wafer inspection systems. Mr. Stallman has played a key role in litigation related to the optical inspection of semiconductor wafers and has a comprehensive understanding of the patent landscape in the field of optical inspection of semiconductor wafers.

87. Second, Stallman prosecuted the '260 patent and each of the continuation patent applications within the '260 patent chain. Stallman admitted he drafted the original KLA patent claims that target the Xitronix technology (*i.e.* claims 7 & 9 of the '441 patent), and a series of almost indistinguishable claims further targeting Xitronix—claims based directly upon claims 7 & 9 of the '441 patent, and broadened therefrom in view of the Court's claim construction and Xitronix's admissions pursuant to the '441 litigation, and comprising substantively identical scope and language.

88. Further, Stallman was actually involved in the litigation of the '441 patent against Xitronix. He was deposed during the federal patent case, and specifically testified that he had drafted claims 7 & 9 of the '441 patent in order to target the Xitronix technology.

89. Moreover, in response to Xitronix's complaint about the failure to disclose prior art to the PTO during the prosecution of the '441 patent, Stallman submitted an affidavit denying culpability for his failure to disclose the "Batista" prior art to the PTO—the same prior art over which the federal jury found the asserted '441 patent claims invalid as obvious.

90. Stallman also filed a request for continued examination after the initial allowance of the '260 patent (occurring just days after the entry of the final judgment in the '441 litigation), and concurrently submitted an information disclosure statement listing Judge Sparks's final judgment order. Thus he was keenly aware of the materiality of the final judgment order to the '260 patent application.

91. Aside from the bald entry of the final judgment order on the information disclosure statement, Stallman did nothing to bring the relevant portions of Judge Sparks' final judgment order to the attention of the examiner.

92. Given Stallman's knowledge of, and personal involvement with, the prosecution of the '441 patent application, the '441 litigation, and each of the continuation patent applications leading to the '260 patent, Stallman's failure to direct the examiner's attention to the relationship between claim 1 of the '260 patent and invalid claim 9 of the '441 patent cannot be inadvertent.

93. For instance, in remarks submitted to the PTO on October 8, 2013, Stallman stated:

[T]he Examiner rejected claim [5] as being indefinite. In particular, the examiner felt that the concept of 'optimize' was not clear and suggested that 'maximize' would be more definite.

With this change, as suggested by the examiner, the language of claim 5 of the '260 patent became identical to the indefinite language which rendered claims 7 & 9 of the '441 patent

invalid by law. Thus, at minimum, this suggestion by the examiner triggered a duty on the part of Stallman to direct the examiner to the portions of the final judgment order dealing with indefiniteness—which Judge Sparks spent no less than six pages discussing.

94. Stallman was thus presented with ample opportunity to ensure the examiner gave the final judgment order its proper attention. Yet Stallman failed again to identify any claims, the patentability of which might be affected by the final judgment order, and simply amended the claim in accord with the examiner's suggestion. In other words, when confronted with a second situation where the examiner had clearly missed material information, thereby again triggering a duty on Stallman's part to bring to the examiner's attention relevant information of which Stallman was aware (in order to satisfy his explicit and uncompromising duty of candor), Stallman failed. This again clearly demonstrates Stallman's intent to deceive the PTO into improperly granting the '260 patent.

95. Thus the inference of an intent to mislead the examiner arises not only from the material omissions of Stallman, but from the thoroughly misleading nature of Stallman's arguments and representations, and from Stallman's failure to direct the examiner to the material information once it became clear the examiner had missed the salient information.

96. Any lapse on the part of the examiner does not exculpate an applicant whose omissions were intentionally deceptive. Nor does the presumption that the examiner complied with his duty to examine the claims relieve an applicant of his duty of candor. Rather, an examiner has a right to expect candor from counsel. It was the examiner who was entitled to rely, and did rely, on Stallman to fully and specifically inform him of information relevant to the patentability and to do so in writing.

97. The examiner's reliance upon Stallman's compliance with his duty of candor is illustrated by the examiner's attention, throughout the prosecution, on art he had himself identified.

98. Likewise, the very fact that the examiner would recommend changing the term "optimize" to the term "maximize" as a solution to indefiniteness clearly demonstrates that, even though Stallman had filed a copy of the final judgment order with the examiner, the examiner was not familiar with the content of that order. Had he been familiar, he would have known that his proposed solution presented the same defect that rendered invalid the '441 claim on indefiniteness grounds.

99. In other words, the record clearly shows the examiner relied on Stallman's characterization of the information disclosed by Stallman to the PTO—without actually reviewing it himself.

100. Stallman intended to take improper advantage of this oversight, for the specific purpose of deceiving the examiner into allowing invalid patent claims, by engaging in dialog with the examiner focused on other less relevant information.

101. Stallman had a duty of candor to bring the consequences of the final judgment order to the attention of the examiner in order to prevent the examiner from issuing invalid patent claims. Stallman's failure inform the examiner that he was operating on a premise that had been categorically rejected by Judge Sparks demonstrates a specific intent to procure the '260 patent through bad faith conduct.

102. Stallman was repeatedly and consistently not forthcoming with material information in his possession and his actions operated to ensure the examiner's attention would not be brought to the controlling law of the case.



103. The actions of Stallman as a whole reflect a clear pattern of insufficient disclosure—falling well short of his duty of candor—followed by attorney argument consisting of wholesale misrepresentations of fact. The duty of candor required Stallman to refrain from submitting arguments he knew to be false or calculated to misdirect the examiner’s attention from the disclosure’s relevant teaching.

104. It is not reasonable to attribute Stallman’s conduct to simple or even gross negligence. Stallman, with his extensive experience in prosecuting patents, the relevant patent landscape, and in patent litigation, as drafter of the original claims targeting Xitronix, and which acts led directly to the prior ‘441 litigation, was previously involved in that litigation, and even submitted an affidavit explaining the circumstances of his failure to submit Batista to the PTO (upon which circumstances Judge Sparks found evidence of “negligence, perhaps gross negligence”). Yet, even after submitting Judge Sparks’s final judgment order in that case to the PTO, Stallman repeatedly and continually violated his duty of candor and disclosure, thereby giving rise to the only reasonable inference that he did so with an intent to deceive the examiner into allowing claims that otherwise would never have been allowed.

105. Stallman cannot overcome a finding of deceit by showing he partly fulfilled his duty of disclosure (*i.e.*, by disclosure of final judgment order). For instance, the stark difference between Stallman’s attempt to explain away the jury’s verdict and his later silence with regard to the final judgment order demonstrates intent to deceive the PTO for the purpose of obtaining allowance of the patent.

106. In particular, when he submitted the jury verdict form to the examiner in November 2010, Stallman argued that he had submitted all prior art relied upon by the jury to the examiner and that he believed the claims presented pursuant to the ‘260 were patentable over the

cited art. Those arguments offered to the examiner tracked the same arguments that KLA made seeking to reject the jury's findings.

107. However, once Judge Sparks overruled those arguments and rendered judgment against KLA, Stallman did not provide any explanation of how the final judgment order related to the presented claims of the '260 patent. Specifically, Stallman failed to inform the examiner that the final judgment order rendered the presented claims unpatentable.

108. Stallman maintained absolute silence as to the final judgment order throughout the prosecution of the '260 patent (*i.e.* for over three years), even when it became clear the examiner had missed the consequence of the final judgment order on the presented claims.

109. Moreover, Stallman failed to inform the examiner that his suggested language change ran afoul of the final judgment order.

110. In the face of Stallman's refusal to accept and abide by the prior express holdings of Judge Sparks, the only reasonable conclusion is that Stallman's conduct amounted to fraud undertaken with the specific intent to procure the issuance of the '260 patent.

111. Ultimately, the entire prosecution of the '260 patent was without any objectively reasonable basis. In fact, in view of the final judgment order, the PTO had no authority to consider the patentability of any claim actually submitted by Stallman (*i.e.* over the law of the case). Thus the entire '260 patent prosecution was an improper attempt to circumvent the binding final judgment rendered against his client.

112. The circumstances surrounding Stallman's conduct before the PTO clearly and convincingly establish an intent to deceive the PTO into improperly granting the '260 patent.

113. Despite having prevailed in the '441 litigation, Xitronix has been impeded in the market by KLA's continued prosecution, before the PTO, of the exact same subject matter

(explicitly targeting Xitronix) held finally invalid in the ‘441 litigation, and which prosecution has finally culminated, in August of 2014, with the PTO’s issuance of broadened versions of the same invalid claims.

114. First, by maintaining its prosecution of invalid patent claims explicitly targeting Xitronix, KLA has imposed collateral harm on Xitronix by impairing Xitronix’ ability to obtain the financing necessary to compete effectively in the active dose metrology market. In particular, by creating a potential, but artificial, liability to suit, KLA has effectively deterred potential investors from investing in Xitronix.

115. For example, since 2012 to present, Xitronix has been approached by numerous private equity firms seeking to invest in the semiconductor optical inspection market, and which firms initially indicated a strong interest in investing in Xitronix. However, when such investors learned of the potential litigation threat posed by KLA’s continued prosecution of patent claims explicitly targeting Xitronix, these potential investors withdrew or deferred their interest pending the ultimate resolution of that threat.

116. Such potential investors are not deterred because KLA has a legitimate legal right to exclude Xitronix—rather, they have decided not to invest, or wait to invest, because KLA is claiming a right it knows it does not have. In particular, by requiring Xitronix to disclose its potential liability to suit to potential investors, KLA has effectively prevented Xitronix from obtaining the financing it needed to compete in the market. Simply put, no investor wants to buy into a lawsuit or to invest in a company that cannot succeed without first winning a lawsuit.

117. While the ‘441 patent litigation did result in the ‘441 patent being held invalid, it did not level the playing field moving forward as it should have. Rather, KLA went immediately back to the PTO to continue its prosecution of the same invalid subject matter targeting Xitronix,

and thus maintained an unwarranted cloud of uncertainty over Xitronix's technology and business.

118. While such uncertainty has not deterred Xitronix from offering for sale its products, it has deterred investors and customers and thereby has impeded Xitronix' ability to effectively market its products. Moreover, by maintaining its prosecution of patent claims explicitly targeting Xitronix, KLA has placed Xitronix' potential customers and investors on public notice<sup>11</sup> that they ultimately risk infringement should they incorporate Xitronix's technology into their manufacturing process.

119. Thus, an important purpose of the continued '260 patent prosecution was to deter customers from doing business with Xitronix by creating an artificial risk the customer could become liable for patent infringement. In particular, by requiring Xitronix to disclose its potential liability to suit to potential customers, KLA has effectively prevented market adoption of Xitronix technology. As noted, no semiconductor manufacturer is willing to risk its manufacturing operations in such a manner. Nor is any such manufacturer willing to seriously engage in testing of potentially infringing products.

120. Conduct is exclusionary if it tends to impair the opportunities of rivals based on something other than competition on the merits. The issuance of the '260 patent to KLA gives KLA the power to exclude Xitronix from manufacturing, selling, or offering for sale Xitronix's own patented products. Thus, the issuance of the '260 patent forces Xitronix to choose between abandoning its business or risking infringement litigation. Xitronix's only other course of action is to continue marketing its ostensibly infringing products and risk actual and treble damages in

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<sup>11</sup> A patent claim informs the public of the subject matter over which the patent provides exclusivity. Likewise, a pending claim in a published patent application informs the public of the subject matter over which the applicant seeks to gain exclusivity.

infringement suit. Thus, KLA's prosecution to issuance of the '260 patent has impeded, and continues to impede, competition on the merits in the dopant activation metrology market. Here, the fraudulent prosecution and procurement of the '260 patent is, in of itself, exclusionary conduct.

121. KLA's prosecution to issuance of the '260 patent creates further artificial barriers to competition because Xitronix has no ability to indemnify semiconductor manufacturers for their potentially infringing use of its products and because the prosecution and issuance of the '260 patent creates uncertainty about Xitronix's ability to withstand the costs of litigation (and thereby also creates uncertainty as to the long term availability of Xitronix' products). Thus, KLA's mere prosecution of patent claims targeting Xitronix has effectively impeded and excluded adoption of Xitronix's technology in the market.

122. In addition to the deterrent effect of the '260 patent prosecution (and issuance) on Xitronix' potential customers and investors, the improper issuance of the '260 patent has essentially doubled the amount of money Xitronix must raise in order to compete effectively—from approximately \$4 million USD to approximately \$8 million USD. Even if Xitronix could convince its customers to adopt its technology in the face of KLA's threat, Xitronix would still need to raise enough money to ensure its ability to withstand the costs of litigation. This has effectively excluded an entire class of investors—venture capitalists—and has forced to Xitronix first win a lawsuit before raising the monies necessary to compete in the market.

123. The issuance of the '260 patent has created litigation risks to Xitronix, prevented Xitronix from obtaining the financing it needed to establish market share, raised its costs, impeded its ability to compete, and deterred customers and business partners from engaging with

Xitronix. In short, Xitronix cannot effectively compete until KLA's artificial threat is eliminated—not simply to its own satisfaction, but to its investors and customers' satisfaction.

124. The issuance of the invalid '260 patent to KLA provides it with an illegitimate patent monopoly over Xitronix products, thereby effectively detaining Xitronix property. Thus the issuance of the '260 patent has created a substantial (although artificial) controversy between KLA and Xitronix, of sufficient immediacy and reality that Xitronix could now bring a declaratory judgment action challenging the '260 patent.

125. KLA's fraudulent prosecution of the '260 patent has thus far proven to be highly efficient exclusionary conduct. After the '441 patent litigation, KLA's maintenance of invalid patent claims targeting Xitronix' products has allowed it to impose significant barriers on Xitronix without KLA itself incurring any serious costs beyond its patent prosecution fees. The potential benefits accruing to KLA from the issuance of the '260 patent include monopoly profits for the life of the fraudulently obtained patent—here until 2022.

126. KLA purchased Therma-Wave in 2007 for approximately \$75 million. That price was predicated specifically upon KLA's valuation of the Therma-Probe technology. In particular, KLA estimated that, over a four year period, it could introduce and sell approximately 50 Therma-Probe 680 systems, for an average selling price of \$1.5 million each, resulting in gross revenue of approximately \$75 million USD (and with the stated objective of greater than eighty-five percent market share in the dopant activation metrology market).

127. However, the emergence, in 2007, of Xitronix as a competitor in the dopant activation metrology market threatened KLA's designs, and in particular, threatened to ruin KLA's \$75 million USD investment in the dopant activation metrology market.

128. KLA responded by performing a competitive investigation of Xitronix, and upon its determination that Xitronix had superior performance on dopant activation applications, KLA began its efforts to capture the Xitronix technology within the ‘441 patent claims. Once KLA obtained the invalid ‘441 patent, KLA alleged infringement by Xitronix, and ultimately spent an estimated \$4 million USD on the failed ‘441 patent litigation—consistent with the \$75 million USD stakes involved.

129. In December of 2012, while maintaining its prosecution before the PTO of the exact same subject matter as held finally invalid by Judge Sparks in ‘441 litigation, KLA introduced the Therma-Probe 680 product to the dopant activation metrology market. KLA marketed the Therma-Probe 680 as containing “new UV laser source”<sup>12</sup> suited “for advanced anneal applications.” But despite KLA’s efforts to improve the performance of the Therma-Probe 680, it still suffers from low signal levels in dopant activation applications.

130. KLA seeks to recoup the \$75 million USD it paid to purchase Therma-Wave through the sale of the Therma-Probe 680 product into the dopant activation metrology market. Given its sunk costs in excess of \$75 million USD, and given its inferior performance on dopant activation applications, KLA’s motive to exclude the Xitronix product from the dopant activation metrology market is manifest.

131. KLA has attempted, and continues to attempt, to control the dopant activation metrology market just by the maintenance of the ‘260 patent, *i.e.* as a tool for suppressing competition in the antitrust sense. KLA’s prosecution of the ‘260 patent, by and through its patent attorney Michael Stallman, was nothing more than a bad faith attempt to interfere directly with the business relationships of Xitronix and to thwart competition. The fact that KLA acted

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<sup>12</sup> However, in fact, the Therma-Probe 680 system uses probe beam wavelengths similar to those of the original Therma-Probe introduced in the 1980’s.

to deliberately deceive the PTO into granting an invalid patent under color of which Xitronix may be excluded from the market is evidence of specific intent to monopolize the dopant activation metrology market.

132. KLA has a dangerous probability of achieving monopoly power over the dopant activation metrology market. Only two products are being offered for sale in this market—KLA's Therma-Probe 680 and Xitronix's XP700. KLA's fraudulently obtained '260 patent gives it the power to exclude Xitronix from the dopant activation metrology market, and has allowed KLA to introduce its Therma-Probe 680 to the dopant activation market without competition.

133. By the time this lawsuit is resolved, there is a dangerous probability KLA will have leveraged the exclusionary power of the '260 patent to gain an entrenched position in the dopant activation metrology market.

134. Furthermore, antitrust injury is being inflicted on semiconductor device manufacturers through the inefficiencies flowing from their forced reliance on KLA's inferior technology, resulting in diminished yield, which is passed on to consumers in the form of higher costs.

135. As recently as spring of 2014, the major semiconductor device manufacturers worldwide (*e.g.* Intel, TSMC, Samsung and Global Foundries) were seeing extraordinarily poor yields on their "20 nanometer" manufacturing processes. For instance, as of August, 2014, at their fabrication facility in Austin, Texas, Samsung had only achieved a yield of approximately thirty percent on their 20 nanometer process. And currently Samsung is seeing yields of less than twenty percent on their "14 nanometer" process. These present yields stand in stark contrast to the yields of eighty percent or greater typically seen on process nodes within the last decade.



This poor yield was and is, in quantifiable part, due to the lack of capability to measure and control laser annealing processes—*i.e.* the lack of an effective dopant activation metrology.

136. Nevertheless, in order to supply the “A9 processor” for the release of the improved Apple iPhone—currently scheduled for the fall of 2015—Samsung is presently going into production with its 14 nanometer process. Samsung’s poor yield will roughly quadruple its manufacturing costs on the A9 processor, and which costs will be passed on to Apple and to consumers of the iPhone.

137. As the preferred manufacturer of the semiconductor chips that go into the Apple iPhone, and as the manufacturer of its own mobile phones, Samsung’s costs, increased by poor yield due in part to KLA’s artificial exclusion of Xitronix from the dopant activation metrology market, are passed directly onto consumers of mobile phones and similar semiconductor electronic devices.

138. In the future, the semiconductor manufacturing industry anticipates an expanding need for control of advanced annealing processes. For example, with the advent of three-dimensional transistor structures and architectures, control of laser annealing processes—some using nanosecond laser pulses—will become an even more critical manufacturing requirement.

139. Without a substantially improved measurement technology for control advanced annealing processes (such as is the Xitronix technology over the Therma-Probe), these advanced annealing processes will remain a source of poor yield, resulting, as is the present status, in delayed innovation and increased costs to the semiconductor manufacturing industry, and which costs are passed directly to consumers of semiconductor electronic products worldwide.

140. Since 2008, Xitronix has been ready, willing, and able to produce its photo-modulated reflectance systems on a commercial level that would compete directly with KLA’s

Therma-Probe products and provide semiconductor device manufacturers worldwide with a superior dopant activation metrology capability.

141. Xitronix has adequate background and experience in the dopant activation metrology market, and in fact, entered the market in 2007, before being sidelined by KLA's false allegations of infringement during the 2008-2010 timeframe. Xitronix has been reasonably capable of raising monies necessary for an unimpeded market entry at any point in time since 2007 (*i.e.* monies adequate for the production of equipment, expansion of operations, ramp of sales and service, etc.).

142. However, KLA's continuing prosecution, before the PTO, of the subject matter held finally invalid in the '441 litigation, has maintained a substantial and anticompetitive impediment to Xitronix. In fact, since the date on which KLA first alleged infringement against Xitronix in 2008, there has been no time during which Xitronix's access to the market as a competitor has not been impeded.

143. KLA's prosecution through issuance of patent claims it fully knows to be invalid has thus stifled competition and has caused injury of the type antitrust laws are intended to prevent.

**CAUSE OF ACTION**  
**(Attempted Monopolization)**

144. XITRONIX incorporates the allegations of paragraphs 1 through 143 as though set forth here in their entirety.

145. As discussed above, KLA, by and through its agent Michael Stallman, has engaged in exclusionary conduct by fraudulently prosecuting to issuance the '260 patent, targeting Xitronix, the subject matter of which Judge Sparks held finally invalid some four years ago.

146. As discussed above, KLA's conduct was and is specifically intended to monopolize and destroy competition in the market for active dopant metrology systems, a market currently valued at approximately \$650 million USD, and which market KLA intended to dominate by and through its acquisition of Therma-Wave for \$75 million USD.

147. As discussed above, KLA has a dangerous probability of achieving monopoly power in the active dopant metrology market, as its Therma-Probe system is one of only two products in the market—the other product being the Xitronix XP700 system, for which KLA has obtained the power to exclude Xitronix from manufacturing, selling, or offering for sale.

148. As discussed above, KLA's conduct has artificially and illegitimately interfered with Xitronix, a competitor ready, willing, and able to produce its superior product on a commercial level, has injured the active dopant metrology market and competition in general, and has caused damage to consumers of semiconductor electronic products worldwide. These are precisely the type of injuries which are intended to be redressed by antitrust laws.

### **REQUESTED REMEDIES**

149. As a proximate result of KLA's anticompetitive conduct, committed jointly and/or severally, and through their employees, agents, or representatives, Xitronix has sustained damages, from the period beginning March 2, 2012, to present, in the form of loss of income in the amount of approximately \$19.1 million USD. In reasonable probability, the Plaintiff will sustain future loss of income in the amount of approximately \$22.9 million USD. Xitronix prays for recovery of these damages.

150. Xitronix prays for recovery of treble damages.

151. Xitronix prays for the recovery of reasonable attorneys' fees and costs as allowed by law.

152. Xitronix prays for pre-judgment interest, post-judgment interest at the highest rate allowed by law.

153. Xitronix prays for such other and further relief as this Court deems just and equitable.

154. Xitronix demands a trial by jury.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff prays that:

- A. Plaintiff recover its actual damages in the amount of \$42 million USD;
- B. Plaintiff recover treble damages;
- C. Plaintiff recover its reasonable attorneys' fees and costs as allowed by law;
- D. Plaintiff recover pre-judgment and post-judgment interest at the highest rate allowed by law; and
- E. Plaintiff be granted such other and further relief as this Court deems just and equitable.

**JURY DEMAND**

XITRONIX demands a jury trial on all issues.

Dated: December 17, 2014

Respectfully submitted,

/s/ Steve Hershberger

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